Fulfillment server 16 uses business constraints or "rules" described above, which it may have previously stored, received within ATP requests from clients 12, and/or obtained in any other way, to source request line-items to particular ATP servers 14 and/or LFMs 22 or to filter out any component quotation and component

5   promise responses from ATP servers 14 and/or LFMs 22 that do not satisfy these constraints. For example, if a supplier provides multiple alternative responses, or responses from alternative groups, fulfillment server 16 may filter out non-compliant responses or responses from unacceptable groups. If none of the alternatives comply, fulfillment server 16 may reject the response in whole. The existence of a list of

10   alternates or alternate groups does not mean they will be used. In one embodiment, client 12 or an associated user may selectively override some or all of these business constraints when generating ATP requests, quotation confirmations, and promise acceptances, according to particular needs.

In one embodiment, fulfillment server 16 supports a hierarchy of one or more

15   sellers of products and each ATP server 14 and/or LFM 22 supports the same hierarchy of sellers but with a subset of the products supported by fulfillment server 16. ATP servers 14 and/or LFMs 22 compute component quotations or component promises based on allocations throughout the seller hierarchy for the corresponding products. These capabilities are described in co-pending U.S. Application

20   No. 08/491,167, filed June 16, 1995 by Kennedy et al. for a "System and Method for Managing Available to Promise (ATP)," and co-pending U.S. Application No. 08/802,434, filed February 18, 1997 by Kennedy et al. for a "System and Method for Managing ATP," both of which are incorporated by reference herein. As a result, system 10 provides the ability to distribute product allocations to ATP servers 14

25   and/or LFMs 22 on a product by product basis, thereby gaining both space and time scalability in systems with large numbers of products.

Fulfillment server 16 may support one or more hierarchies of related or generic products, as described in U.S. Application No. 08/802,434. ATP servers 14 and/or LFMs 22 may support one or more subsets of the same hierarchies and may

30   compute component quotations or component promises based on the allocations to the products in those sub-hierarchies. This provides additional technical advantages in applications where products are related by hierarchies.

One or more fulfillment servers 16 may work cooperatively, independently, or otherwise with the same set of ATP servers 14 and/or LFMs 22. Each such ATP server 14 and/or LFM 22 may accept component ATP requests and component quotation confirmations from multiple fulfillment servers 16 and may send

5   component quotations or component promises to multiple fulfillment servers 16. This offers numerous technical advantages, including the ability to scale the system to handle larger numbers of clients or larger numbers of ATP requests 30. In addition, this capability allows for the geographical or organizational distribution of fulfillment servers 16 according to particular needs.

10   Each fulfillment server 16 may enforce different business constraints, depending on the set of clients 12 each fulfillment server 16 supports. Each fulfillment server 16 may work with different sets of ATP servers 14 and/or LFMs 22, where each ATP server 14 and/or LFM 22 may belong to one or more of the LFM sets or ATP sets corresponding to fulfillment server 16. Each fulfillment server 16

15   may also support its own supply or allocations for one or more of products. This offers numerous additional technical advantages, including significant flexibility in setting up distributed ATP systems with fulfillment servers 16 tailored and optimized to support a variety of clients 12. Moreover, these options facilitate setting up local allocations of product supply at fulfillment servers 16 to reduce latency and increase

20   throughput for requests of common products.

Each fulfillment server 16 may have the capability to operate as an ATP server 14 and/or LFM 22. In one embodiment, each fulfillment server 16 will at least be an adequate ATP server 14 to support a separate LFM 22. In either situation, it is possible to form a hierarchy of ATP servers 14 and/or LFMs 22 by using a first

25   system, including a first fulfillment server 16, LFMs 22, and/or ATP servers 14, as ATP server 14 within a second system that includes a second fulfillment server 16, LFMs 22, and/or ATP servers 14. In this way, a hierarchy of LFMs 22 and/or ATP servers 14 of appropriate breadth and depth can be formed according to particular needs. The present invention contemplates any suitable relationship between one or

30   more LFMs 22, one or more ATP servers 14, and one or more fulfillment servers 16.

Such hierarchical organization facilitates numerous additional system designs and offers numerous additional technical advantages. For example, each LFM 22 or

ATP server 14 in such a hierarchy may be assigned one or more products to handle, where the products are part of a hierarchy of related or generic products. In that case, the LFMs 22 and/or ATP servers 14 may compute availability of the generics of an assigned product by sending component ATP requests 32 to the particular LFM 22 or

5   ATP server 14 that corresponds to the generic products, providing further parallelization and scalability.

Also described in U.S. Application Nos. 08/491,167 and 08/802,434, fulfillment server 16 may support a hierarchy of one or more sellers of products and each LFM 22 or ATP server 14 may correspond to a particular one of those sellers.

10 ATP server 14 or LFM 22 may hold allocations of supply for its associated seller and compute all component quotations and component promises possible with allocations it contains. Fulfillment server 16 receives these component quotations or component promises and combines them for each product as if ATP request 30 had been quoted or promised by a single system having all of the allocations. As a result, system 10

15 provides the ability to distribute product allocations to LFMs 22 and/or ATP servers 14 on a seller by seller basis, thereby gaining both space and time scalability in applications with large numbers of sellers or gaining flexibility in applications where seller organizations are geographically or economically separated. Each LFM 22 or ATP server 14 may compute availability for its parent seller by sending one or more

20 component ATP requests 32 to the LFM 22 or ATP server 14 corresponding to the parent seller. Furthermore, multiple LFMs 22 and/or ATP servers 14 may hold separate allocations for a particular product and fulfillment server 16 may distribute quoting activity across such ATP servers 14 and/or LFMs 22 as needed to obtain adequate quotes. These and other features of system 10 provide or otherwise allow

25 for advantageous parallelization, scalability, throughput, as well as distributed deployment of seller systems.

To achieve even further scalability, further breakdowns can be made. In one embodiment, a first fulfillment server 16 can work with LFMs 22 and/or ATP servers 14 that each are assigned or otherwise correspond to a one or more designated

30 products. Each such LFM 22 or ATP server 14 can in turn use a second fulfillment server 16 backed by separate LFMs 22 and/or ATP servers 14 that have each been allocated a portion of the overall supply allocation for a designated product. The